

## ECS Configuration Change Request

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Page(s)

<b>1. Originator</b> Sarah Lewallen	<b>2. Log Date:</b> 10/14/02	<b>3. CCR #:</b> 02-0900	<b>4. Rev:</b> —	<b>5. Tel:</b> 301-925-0865	<b>6. Rm #:</b> 2117B	<b>7. Dept.</b> SE
<b>8. CCR Title:</b> Add memory to e0spg01 and e0spg05						
<b>9. Originator Signature/Date</b> Sarah Lewallen /s/ 10/14/02			<b>10. Class</b> II	<b>11. Type:</b> CCR	<b>12. Need Date:</b> 10/30/02	
<b>13. Office Manager Signature/Date</b> James Mater /s/ 10/14/02			<b>14. Category of Change:</b> Update ECS Baseline Doc.		<b>15. Priority:</b> (If "Emergency" fill in Block 27). Routine	
<b>16. Documentation/Drawings Impacted</b> ( <i>Review and submit checklist</i> ): 920-TDE-001			<b>17. Schedule Impact:</b> None		<b>18. CI(s) Affected:</b> SPRHW	
<b>19. Release Affected by this Change:</b> 6A, 6B		<b>20. Date due to Customer:</b>		<b>21. Estimated Cost:</b> None - Under 100K		
<b>22. Source Reference:</b> <input checked="" type="checkbox"/> NCR (attach) <input type="checkbox"/> Action Item <input type="checkbox"/> Tech Ref. <input type="checkbox"/> GSFC <input type="checkbox"/> Other: 34233						
<b>23. Problem: (use additional Sheets if necessary)</b> The number of concurrent runs of this PGE is being restricted. Otherwise all 12 CPUs would try to run at one time exceed the machine memory by 4 times on e0spg05 and 2 times on the e0spg01. The L1B PGE should execute for approximately 5 mins. Some on the jobs were trashing for up to 5-7 hours.						
<b>24. Proposed Solution: (use additional sheets if necessary)</b> Add 2GB of additional memory to e0spg01 and e0spg05						
<b>25. Alternate Solution: (use additional sheets if necessary)</b> None						
<b>26. Consequences if Change(s) are not approved: (use additional sheets if necessary)</b> Will not be able to use all CPUs for PGE processing						
<b>27. Justification for Emergency (If Block 15 is "Emergency"):</b>						
<b>28. Site(s) Affected:</b> <input type="checkbox"/> EDF <input type="checkbox"/> PVC <input type="checkbox"/> VATC <input checked="" type="checkbox"/> EDC <input type="checkbox"/> GSFC <input type="checkbox"/> LaRC <input type="checkbox"/> NSIDC <input type="checkbox"/> SMC <input type="checkbox"/> AK <input type="checkbox"/> JPL <input type="checkbox"/> EOC <input type="checkbox"/> IDG Test Cell <input type="checkbox"/> Other						
<b>29. Board Comments:</b>				<b>30. Work Assigned To:</b>	<b>31. CCR Closed Date:</b>	
<b>32. EDF/SCDV CCB Chair (Sign/Date):</b>		<b>Disposition:</b> Approved App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ECS				
<b>33. M&amp;O CCB Chair (Sign/Date):</b> Gary Gavigan /s/ 10/15/02		<b>Disposition:</b> <b>Approved</b> App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ECS				
<b>34. ECS CCB Chair (Sign/Date):</b>		<b>Disposition:</b> Approved App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ESDIS				

# ADDITIONAL SHEET

**CCR #:** 02-0900      **Rev:** —      **Originator:** Sarah Lewallen

**Telephone:** 301-925-0865      **Office:** 2117B

**Title of Change:** Add memory to e0spg01 and e0spg05

NCR ID: ECSed34233      Status: CLOSED      Submitted: 020507  
NCR Class: OPERATIONS      Project: OPS\_Sys\_Engr      Enclosures: 7

**NCR TITLE...**

Science Processors need more memory to do L1B processing.

Long-Description : The purposed LP DAAC produced L1Bs have been running on an ICO data as a pilot in the OPS MODE. The PGE is memory intensive compared to our present Level 2 PGEs. Each granule/run of the PGE takes 300M of memory.

This is a large problem since the e0spg05 only has 1024M and the e0spg01 has 2048. This means only 3 granules may execute at one time on the e0spg05 and 6 on the e0spg01. This has created several problems:

1. The number of concurrent runs of this PGE had to be restricted. Otherwise all 12 CPUs would try to run at one time exceed the machine memory by 4 times on e0spg05 and 2 times on the e0spg01. The L1B PGE should execute for approximately 5 mins. Some on the jobs were trashing for up to 5-7 hours.
2. The Routine DST PGE is restricted by available CPUs, which allow the Staging and Archiving to take place while other jobs are in the execution stage. Since the L1B PGE must be restricted by concurrent running jobs nothing stages ahead and the new jobs do not beginning until the old job has archived. This is a large impact with distribution as busy as it is.
3. Load balancing is yet another problem, since the science processors do not have the same amount of memory. The system balances the load equally between the two science processors but the e0spg01 can process twice as many jobs as the e0spg05. This leads to the e0spg01 having completed all it jobs and sitting idle while the e0spg05 has many hours of processing left to do.

**IMPACT:** More memory will be needed for both Science Processors to run the L1B processing to run effectively. The system resources are sitting idle a good deal of the time. Presently, without a memory upgrade the L1B PGE processing is not possible.

**Note:** This is the second CCR to upgrade the memory. CCR 02-0438 was implemented upgrading e0spg01 and e0spg05 to 3 GB memory each. 2 GB of memory moved from the icg11 Challenge machine to spg05. 1 GB of memory moved from tsq01 to spg01. This brought spg05 and spg01 to 3 GB. This CCR will take both machines to 5GB.